

Transitions in the context of marine litter

When you think about it, in the Kingdoms of nature there is only one goal, and one goal only - to preserve our species. Let's not forget that the processes in nature are very closely interconnected, as it is well known that one person's trash is another person's treasure. In nature, this is perfectly reflected in the energy and matter cycles, where matter is constantly changing its state of being, and where they cycle between the decomposer and the decomposing. This wonderful balance of nature is thrown off by the addition of a simple element – litter or trash - that nobody needs and the only way to deal with it for years has been to simply hide it. After all, litter does not grow in nature, or maybe the sea is a different environment, because this summary is about 'marine litter'. Unfortunately, this is one of the transitions that I will try to introduce or remind you of.

So, what is a marine litter? In a simple definition, it would be any solid man-made or processed material present in the marine environment. It is no secret that the most common material is artificial polymer or plastic. If one looks in more detail at how the use, handling and observation of plastics in the nature, and especially in the marine environment, has evolved from the first synthesis of 'modern' plastics at the beginning of the twentieth century to the present day, the term 'big bang' comes to mind. After all, how else can you explain the transition from a couple of hundred scientific publications a year in the 1970s on plastic particles, accidentally found in marine water samples, to the recent years, when the number of targeted publications focusing on the issue of this pollution has exceeded 33 000 per year. And then there are the new research favourites: micro- and nanoplastics...

It is micro- and nanoplastics that speak of the next transition in the context of marine litter, from macro to micro (less than 5 mm) or nano (less than 1 micrometre). While we can see and clearly perceive larger plastic objects or fragments, the human eye is helpless when it comes to micro- and nanoparticles. Under the influence of solar radiation, physical friction and biological factors, plastics begin to break down into smaller particles, until eventually they become invisible to the naked eye and become embedded in the invisible, but continuously rotating, system of the marine environment. And once a material such as an artificial polymer enters the marine system, there are many ways for it to exist and to be a dead end, instead of returning to the matter cycle.

Do not think that these artificial polymers in the marine environment are just sitting quietly in a corner like a fly on the wall or, in this case, floating around like an observer. On the contrary, marine litter can even become habitat-changing elements if, for example, hard plastic pieces or lost fishing nets appear on the sandy bottom, to which marine organisms can attach themselves and thus settle in their new environment. Another newly discovered function that artificial polymers perform well in the seas is that of a "taxi service", where sedentary organisms can travel across the world's oceans with the litter that drifts on the currents.

Let us not forget that Lithuania is also a maritime nation, and being a maritime nation is not only an opportunity to benefit from a window on the world, but also to feel responsible for the environment in which you live. Lithuania, like all European Union countries, is committed to monitoring its marine environment and to ensuring that it reaches or remains in a good state. One of the 11 indicators that define that good environmental status is the amount or quantity of marine litter. The national transformation in this area began in 2013 with the establishment of a PhD thesis at Klaipėda University on the issue of marine litter, because data on how much, what and what kind of litter is found in our seas was unknown. Today, in Lithuania, the

amount of marine litter on the Baltic Sea coast, in sea water and in bottom sediments is systematically monitored.

Another change in marine litter is the change from polluting to illuminating or educating. This is an excellent environmental education tool that is increasingly being used to raise public awareness of the human impact on the natural environment and to encourage conscious behaviour. Just as this Biennale is a blend between science and art, marine litter is increasingly visible in artworks and installations not only in Lithuania but all over the world.